

**Appendix G: Endangered Species Act
Section 7 Consultation**

ENDANGERED SPECIES ACT - SECTION 7 CONSULTATION

BIOLOGICAL EFFECTS EVALUATION

Action Agency: Department of Commerce; National Oceanic and Atmospheric Administration (NOAA)

Activity: Approval of Program Amendment to the Alaska Coastal Management Program and Continued Federal Funding

Date: October 24, 2005

Executive Summary

Section 7(a)(2) of the Endangered Species Act of 1973, as amended (ESA), requires that each federal agency must ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any listed species or destroy or adversely modify designated critical habitat of such species. This process occurs in consultation with the U.S. Fish and Wildlife Service (U.S. FWS) and the National Marine Fisheries Service (NMFS), depending upon the protected species that may be affected.

The federal action agency in this case is the National Oceanic and Atmospheric Administration (NOAA) and specifically the Office of Ocean and Coastal Resource Management (OCRM) that administers the Coastal Zone Management Act (CZMA). The federal action at issue is the approval by NOAA of a proposed program amendment by the State of Alaska as part of the federally-approved Alaska Coastal Management Program (ACMP) and the subsequent funding of the ACMP, as amended. The term action area under the ESA means “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action” (50 CFR §402.02(d)). As such, the action area for this federal action includes the State of Alaska, state waters, and extends potentially for some distance into federal waters of the U.S. Exclusive Economic Zone (EEZ). Within the action area, there are 14 species of concern, either listed as endangered, threatened, or as a candidate for listing, and both service agencies have discrete responsibilities for their protection.

To meet its obligations under the ESA, OCRM alerted the Alaska Regional offices of the U.S. FWS and NMFS through correspondence dated July 27, 2005 to request the initiation of preliminary consultation for the above-mentioned Federal action. The process calls for the federal action agency to provide the Services with relevant information regarding an evaluation of the likely direct and indirect effects of the proposed action on these species or designated critical habitat in the action area. This evaluation should be based on current information on the status and distribution of each listed or candidate species, including their abundance, population

trends, conservation needs, and current threats and vulnerabilities. The action agency is also expected to make a determination based on this analysis of the degree to which the proposed action is expected to affect those species and critical habitats. The effects analysis and determination are presented in the document to follow.

The effects analysis has posed a particular challenge since the ACMP is a management plan with enforceable standards and policies that will be used to guide future actions. Consequently the effects of approving or denying the program amendment to the ACMP are difficult to analyze because they are secondary and dependent on separate, future, discretionary actions by federal, state, local, and tribal authorities. Although these future actions and associated environmental effects are difficult to predict, reasonable conclusions about the likelihood of effects can be inferred from recent history of agency actions.

The proposed federal action, described in general below, entails a comprehensive set of changes to both the substantive content of and the processes for the planning and implementation of the ACMP. Some of those program changes have been singled out for this analysis because of their potential for direct and indirect effects on listed species and critical habitat. The program changes in question include significant revisions to policies for mining, habitat, mitigation, and subsistence. They also include the diminished level of involvement by coastal district governments in the federal consistency review process, leading to reduced district influence over the consistency of federal activities and projects requiring federal licenses, permitting, or federal funding with the enforceable policies and standards of federally-approved District plans.

It is our determination that the approval of the ACMP program amendment is not likely to adversely affect listed species or designated critical habitat. Future proposed federal agency actions will entail consultation with the Service agencies, and the State is encouraged to coordinate voluntarily with NMFS and the U.S. FWS in other cases to meet the conservation needs of protected resources.

Finally, it should be noted that OCRM has prepared a Draft Environmental Impact Statement (DEIS) on the ACMP program amendment in accordance with the National Environmental Policy Act. The document, released on September 23, 2005 for a 45-day public comment period and available at <http://coastalmanagement.noaa.gov/pcd/up.html>, contains a full description of the changes in the ACMP program amendment and the affected environment, as well as an analysis of the potential consequences of three alternatives on the natural and human environment. The preferred alternative is OCRM's action to approve Alaska's request to incorporate the amendment as part of the State's federally-approved program. The preferred alternative is the basis for the evaluation of effects of listed species that follows.

Background

Overview of the proposed action

In 2003, the State of Alaska adopted legislation and regulations that made important revisions to its federally-approved Coastal Management Program. The program changes that Alaska has adopted are substantial, and contain many potentially controversial elements. The purpose behind adopting the amendments was to improve the State's consistency review process both in timing and predictability, thereby reducing duplication of permit review with application of multiple layers of standards, and provide certainty for private industry capital commitments. Methods for achieving these goals included legislative actions that eliminated the original Program's Coastal Policy Council and transferred its duties to the Alaska Department of Natural Resources (DNR); replaced the current statewide standards and coastal district plans with standards and local enforceable policies that were considered less susceptible to subjective interpretation and non-duplicative of existing requirements; and clarified that matters regulated or authorized by state or federal law were not subject to local enforceable policies, unless the policy relates specifically to a matter of local concern. In addition, several activities that previously would have been required to go through the state coastal consistency review process are now exempt; and limits have been placed on parties who have standing to file legal claims against ACMP consistency decisions.

Overview of Listed Resources in the Action Area

There are 14 species included in the action area that are listed as endangered, threatened, or candidates for listing under the ESA. NMFS is responsible for managing seven species of whales (blue, bowhead, fin, humpback, Northern Pacific right, sperm, and sei) and two populations of Steller sea lions, while the U.S. FWS is responsible for managing a sea bird (short-tailed albatross), two species of sea ducks (Steller's eider and spectacled eider), a population of northern sea otters, and a fern found only on Adak Island in the central Aleutian chain. Another diving sea bird, the Kittlitz's murrelet, is currently a candidate for listing. The table on the next page contains the current list of endangered, threatened, and candidate species and designated critical habitat in Alaska.

Status of Listed Resources and Designated Critical Habitat

The following species summaries were abstracted and compiled from information found in the following documents: *Alaska Marine Mammal Stock Assessments*, 2003 (Angliss and Lodge 2004); NMFS Biological Opinion for the Kensington Gold Project 2005; NMFS Biological Opinion for the Liberty Project 2002; *Recovery Plan for the Blue Whale*, 1998; *Draft Recovery Plan for the Fin Whale and Sei Whale*, 1998; and the U.S. FWS publication *Alaska's Threatened and Endangered Species*, 2005. Materials were drawn also from websites maintained by both NMFS and the U.S. FWS and several other miscellaneous sources.

ENDANGERED, THREATENED, AND CANDIDATE SPECIES IN ALASKA

SPECIES MANAGED BY U.S. FISH AND WILDLIFE SERVICE

SPECIES AND STATUS	DATE OF STATUS	CRITICAL HABITAT DESIGNATED ON	RANGE IN ALASKA
Endangered			
Short-tailed albatross (<i>Phoebastria albatrus</i>)	7/31/00	n/a	U.S. Territorial waters, Gulf of Alaska, Aleutian Islands, Bering Sea Coast, Japan, Russia, high seas
Eskimo curlew (<i>Numenius borealis</i>)	3/11/67	n/a	No longer occurs in Alaska
Aleutian shield fern (<i>Polystichum aleuticum</i>)	2/17/88	n/a	Adak Island
Threatened			
Spectacled eider (<i>Somateria fischeri</i>)	5/10/93	2/6/01	Western and Northern Alaska (coastal)
Steller's eider (<i>Polysticta stelleri</i>)	6/11/97	2/2/01	Southwestern, Western and Northern Alaska
Northern sea otter (<i>Enhydra lutris kenyoni</i>) (Southwest Alaska Population)	8/9/05	n/a	Aleutian Islands, Alaska Peninsula, Kodiak Island
Candidate			
Kittlitz's Murrelet (<i>Brachyramphus brevirostris</i>)	4/4/04	n/a	Coastal waters in southern and northwestern Alaska

SPECIES MANAGED BY NOAA MARINE FISHERIES SERVICE*

SPECIES AND STATUS	FREQUENCY OF OCCURRENCE	RANGE IN ALASKA
Endangered		
Stellar sea lion (<i>Eumetopias jubatus</i>) west of 144°	Regular	Bering Sea, N. Pacific
Blue whale (<i>Balaenoptera musculus</i>)	Rare	Bering Sea, Gulf of Alaska, N. Pacific
Bowhead whale (<i>Balaena mysticetus</i>)	Regular	Chukchi Sea, Beaufort Seas
Fin whale (<i>Balaenoptera physalus</i>)	Regular	Chukchi Sea, Bering Sea, Gulf of Alaska, N. Pacific
Humpback whale (<i>Megaptera novaeangliae</i>)	Regular	Bering Sea, Gulf of Alaska, N. Pacific
North Pacific right whale (<i>Eubalaena japonica</i>)	Rare	Bering Sea, Gulf of Alaska, N. Pacific
Sperm whale (<i>Physeter macrocephalus</i>)	Regular	Bering Sea, Gulf of Alaska, N. Pacific
Sei whale (<i>Balaenoptera borealis</i>)	Rare	Gulf of Alaska, N. Pacific
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	Rare	Gulf of Alaska
Threatened		
Stellar sea lion (<i>Eumetopias jubatus</i>) east of 144°	Regular	Bering Sea, Gulf of Alaska, N. Pacific
Loggerhead sea turtle (<i>Caretta caretta</i>)	Rare	Gulf of Alaska
Green sea turtle (<i>Chelonia mydas</i>) (incl. <i>Agassizi</i>)	Rare	Gulf of Alaska

*A number of listed trout and salmon species that spawn in the lower Pacific Northwest states may occur in the Exclusive Economic Zone within the Gulf of Alaska and Bering Sea/Aleutian Islands during the marine phase of their life cycle. For information on these species, see the NMFS Northwest Region website: <http://www.nwr.noaa.gov>.

*Green, loggerhead, and leatherback sea turtles, while recorded to occur in Alaska, are considered accidental and thus outside of the listed population of these species.

Endangered Species Managed by U.S. FWS

Short-tailed Albatross

Status and distribution

With a wingspan of over seven feet, the short-tailed albatross is the largest seabird in the North Pacific. Only two breeding colonies remain active today. The largest colony, on Torishima Island, south of Japan, is home to 80-90% of the world's population; the remainder breeds on Minami-Kojima Island, northwest of Taiwan. The birds forage widely across the temperate and subarctic North Pacific and can be seen in the Gulf of Alaska, along the Aleutian Islands, and in the Bering Sea. They feed at the ocean surface on squid, fish, and shrimp and may also attempt to steal bait from longline hooks. The short-tailed albatross was listed as endangered throughout its range in 2000.

Abundance

The world population is currently estimated to be about 2000 birds and is believed to be increasing. Like many seabirds, they are slow to reproduce and are long-lived.

Current population trends

Short-tailed albatrosses have survived multiple threats to their existence. During the late 1800s and early 1900s, an estimated five million birds were clubbed to death by feather hunters until the species was nearly extinct. In the 1930s, damage to their nesting habitat from a volcanic eruption on Torishima Island reduced the population to fewer than 50 birds. By 1993, their numbers had increased to 600 birds.

Potential threats to the short-tailed albatross

Due to their extremely small population size and very restricted breeding distribution, short-tailed albatross are quite vulnerable to any threats. Loss of nesting habitat to volcanic eruptions, severe storms, and competition with black-footed albatrosses for nesting habitat continue to be natural threats to short-tailed albatrosses today. Human-induced threats include hooking and drowning on commercial longline gear, collision with vessel rigging, entanglement in derelict fishing gear, ingestion of plastic debris, and contamination from oil spills.

Conservation needs for the short-tailed albatross

The U.S. FWS works cooperatively with NMFS and the University of Washington Sea Grant Program on ways to minimize the impacts to seabirds by commercial fisheries. NMFS requires the Alaska longline fisheries to employ bird avoidance techniques, such as using buoy or streamer lines; performance standards have been specified through regulation.

The government of Japan provides legal protection to the short-tailed albatross as a Special Bird of Protection and through the protection of its main nesting island, Torishima, as a Special National Monument. The country has also tried to improve the colony site by planting grass to stabilize soils and provide cover. Unfortunately, Japan and China dispute the ownership of Minami-Kojima Island, which has prevented scientists from aiding in the recovery of the 10-20% of the birds that nest there.

Aleutian Shield Fern

Status and distribution

The Aleutian shield-fern is now known to exist only on Adak Island in the central Aleutian Islands, where four remnant populations are located on a single mountain on east-facing steep and rocky slopes. Historically, the fern also occurred on Atka Island. It may have been more widespread in the Aleutians, but periodic periods of glaciation probably reduced its abundance. The plant was listed as endangered in 1988.

Abundance

There are currently four populations totaling approximately 143 clumps on Adak Island. The Aleutian shield-fern may never have been very abundant and some scientists consider it to be a living fossil from the Pleistocene Era.

Current population trend

Currently, the Adak populations appear to be stable. Caribou were introduced to the island in 1958 where their grazing has had an impact on the habitat near where the fern is found.

Current threats to the Aleutian fern

Because of their restricted range, the fern is highly susceptible to unpredictable events such as rock slides. The populations are located within a military reservation managed by the U.S. FWS as part of the Alaska Maritime National Wildlife Refuge. The military base was recently closed and the future use of the installation is unknown. The ferns are protected from unauthorized plant collecting. They are also being cultivated to ensure that reserve populations exist should the natural populations be destroyed.

Spectacled Eider

Status and distribution

Spectacled eiders (*Somateria fischeri*) are large diving ducks with a wing span of 20-22 inches whose current breeding range is distributed along the central coast of the Yukon-Kuskokwim Delta and the arctic coastal plains of Alaska and Russia. During the winter months (October through March) the birds move far offshore where they gather in openings of nearly continuous sea ice. Wintering flocks have been observed in the Bering Sea between St. Lawrence and St. Matthew Islands. Around the time of spring break-up, breeding pairs move to nesting areas on wet coastal tundra near shallow ponds or lakes. There they feed on aquatic insects, crustaceans, and vegetation. Breeding females and their young remain here until early September when they reconnect with the males at offshore molting areas in relatively shallow water. In Alaska, important molting areas have been identified in eastern Norton Sound and Ledyard Bay. The spectacled eider was listed as threatened in 1993.

Abundance

The worldwide population of spectacled eiders is thought to total about 360,000. Only about 4,000 pairs nest in the Yukon-Kuskokwim Delta. Another 3,000 - 4,000 pairs currently nest in northern Alaska and Russia, while at least 40,000 pairs nest in arctic Russia.

Current population trends

Between the 1970s to the 1990s, the breeding population in the Yukon-Kuskokwim Delta declined by over 96%. Historical data for other nesting areas are scarce.

Current threats to the spectacled eider

Lead poisoning caused by consumption of spent lead shot has been documented in this species on the Yukon-Kuskokwim Delta and continues to be a threat. Use of lead shot for waterfowl hunting has been prohibited throughout the U.S. since 1991. Other causes for the decline of spectacled eiders are not well understood but a number of hypotheses have been proposed. They are: increased predation on the breeding grounds by foxes, large gulls, and ravens attracted by human activities; shifts in food availability in the Bering Sea during the non-breeding season; commercial fisheries; and by environmental contaminants at sea due to global atmospheric and marine transport of industrial and agricultural chemicals.

Conservation needs for the spectacled eider

The U.S. FWS designated critical habitat for the spectacled eider in 2001. These include areas on the Yukon-Kuskokwim Delta, in Norton Sound, Ledyard Bay, and the Bering Sea between St. Lawrence and St. Matthew Islands. To protect spectacled eiders and their breeding, molting, and wintering habitat, the U.S. F&WS has established specific guidelines and recommendations.

For projects in areas used by spectacled eiders for nesting and brood-rearing, controls are placed on activities involving habitat alteration, vehicle and foot traffic, and noise production. Proposed projects in coastal marine waters around the Alaska Peninsula, the Aleutian Islands, Kodiak Island, the western Alaska coastline, lower Cook Inlet, and Nunivak Island must be in adherence to specific guidelines established by the U.S. FWS.

Subsistence/Native harvest information

Reported subsistence harvest on the Yukon-Kuskokwim Delta has averaged 272 spectacled eiders per year for the last ten years.

Steller's Eider

Status and distribution

Steller's eiders (*Polysticta stelleri*) are diving ducks that spend most of the year in shallow nearshore marine waters. The smallest of the four eider species, averaging 17-18.5 inches long, feed on molluscs and crustaceans. Three breeding populations of Steller's eiders are recognized, two in Arctic Russia and one in Alaska. The population that nests in Alaska was listed as threatened in 1997. Their current breeding range is confined primarily to the Arctic Coastal Plain between Wainwright and Prudhoe Bay, with a notable concentration near Barrow. After nesting, Alaska's Steller's eiders move into the nearshore marine waters of southwest and south-central Alaska. In the fall, adults undergo a flightless molt in the Kuskokim shoals and lagoons on the north side of the Alaska Peninsula, most notably Izembek and Nelson lagoons. During the winter, most disperse into the coastal waters of the eastern Aleutian Islands and the south side of the Alaska Peninsula, Kodiak Archipelago, and southern Cook Inlet. During spring migration, Steller's eiders concentrate in Kuskokwim and Bristol bays to await the retreat of sea ice and opening of over water migratory routes.

Abundance

The threatened population is thought to include hundreds to low thousands of birds on the Arctic Coastal Plain, and possibly dozens on the Yukon-Kuskokwim Delta. Steller's eiders do not breed on the North Slope every year.

Current population trends

It is known that the Alaska breeding population was once common in portions of the Yukon-Kuskokwim Delta and were recorded nesting on Saint Lawrence Island, the Seward Peninsula, the Alaska Peninsula, and Aleutian Islands. Today, they are known to be scarce on the delta and have not been found breeding elsewhere in western Alaska for several decades. Current population sizes are not known with much precision.

Current threats to the Steller's eider

Several threats have been identified that may be leading to the decline of both Steller's and spectacled eiders in the Yukon-Kuskokwim Delta. They are lead poisoning, predation by animals associated with human activities, and the risk of oil spills and disturbance created by marine shipping and commercial fishing. Other possible threats include disease, marine contaminants, and changes in the Bering Sea and North Pacific ecosystem that may affect food availability.

Conservation needs for the Steller's eider

The U.S. FWS designated critical habitat for the Steller's eider in 2001. Subsistence and sport hunting is prohibited under the Migratory Bird Treaty Act. Hunting of Steller's eiders has been closed since 1981 in Russia and since 1991 in Alaska. As with the spectacled eider, the agency has established guidelines and recommendations for projects and activities within the ducks' breeding, molting, and wintering habitat.

Subsistence/Native harvest information

Some illegal sport and subsistence harvest is still thought to occur in Alaska.

Northern Sea Otter (Southwest Alaska Distinct Population Segment)

Status and distribution

Sea otters (*Enhydra lutris*) occur in nearshore coastal waters within the 40 m depth contour from the Aleutian Islands to California. Sea otters are not migratory or known to disperse over long distances. Their main source of food is the sea urchin. Of the three populations recognized in Alaska, sharp declines have been documented in the Southwest stock leading to their listing as a threatened species under the ESA in August 2005. The range for this Distinct Population Segment (DPS) includes nearshore waters from the Aleutian Islands to Cook Inlet, including waters adjacent to the Aleutians, the Alaska Peninsula and the Kodiak archipelago.

Abundance

Surveys have shown that the greatest concentration of sea otters in the world was located in the Aleutian Islands. Since the mid-1980s, numbers have declined here by at least 56 - 68% from as many as 74,000 otters to current levels estimated to be below 9,000 animals. The U.S. FWS final rule extending federal protection and recovery provisions of the ESA reported an adjusted population estimate for the entire DPS range of 41,865 animals (Federal Register Vol. 70, No. 152, August 9, 2005).

Current population trends

Sea otters were nearly driven to extinction by extensive commercial harvests from 1741 to 1911, when they were afforded legal protection. By then, fewer than 2,000 animals were estimated to

remain in thirteen remnant colonies. The first systematic aerial surveys of sea otters in southwest Alaska were conducted from 1957 to 1965. These surveys indicated that sea otter populations were growing and that animals were recolonizing much of their former range. The reason for the current geographically extensive and rapid decline of the sea otter is not known at this time. Sea otters on the Russian side of the Aleutian Islands are doing better than their American counterparts.

Current threats to the southwest Alaska northern sea otter population

Based on the available data, sea otter abundance in the southwest DPS is not likely to be significantly affected by commercial fishery interactions at present. However, exploration, development, and transport of oil and gas resources can adversely impact sea otters and nearshore coastal ecosystems in Alaska. Vulnerability of sea otters to oiling was demonstrated by the 1989 Exxon Valdez grounding. Contact with oil reduces a sea otter's ability to trap air in their fur for warmth and buoyancy. It has been estimated that 3,905 sea otters died in Alaska as a result of the Valdez oil spill and studies suggest that sea otters and nearshore ecosystems are still recovering from this catastrophic event. There is no evidence that routine oil and gas development and transport have a direct impact on the southwest Alaska sea otter population.

Population studies in the Aleutian Islands indicate that observed declines of the southwest DPS of the northern sea otter are the result of increased adult mortality. A current hypothesis suggests that predation by transient killer whales may be the leading cause for the population decline. Disease, starvation, and contaminants are not presently implicated in the Aleutians but these are factors thought to require additional evaluation. It is important to note that sea otters function as keystone species and their numbers have a strong influence on the functioning and overall integrity of the near-shore kelp bed ecosystem where sea otters keep sea urchin populations in check. As a consequence of the sea otter decline, kelp forests in many areas are also thought to be in decline.

Subsistence/Native harvest information

Subsistence hunters in the Aleutians and the Alaska Peninsula take about 100 otters annually. These levels do not appear to be a major factor in the decline.

Candidate Species

Kittlitz's Murrelet

Status and distribution

Kittlitz's murrelet (*Brachyramphus brevirostris*) is a relatively rare small diving seabird. Most of the world population breed, molt, and winter in Alaskan coastal waters discontinuously from Point Lay south to northern portions of southeast Alaska. This species prefers habitat for nesting that is adjacent to glacially influenced waters. They tend to forage around tidewater glaciers among icebergs and brash ice, but avoid areas that contain heavy ice. The Kittlitz's murrelet was designated a candidate species throughout its range by the U.S. FWS in March 2004.

Abundance

The total worldwide population of Kittlitz's murrelets is estimated at 9,600 to 26,700 birds. It has what is considered to be the smallest population of any seabird considered a regular breeder in Alaska.

Current population trends

The population has undergone significant decline in three of its core population centers--Prince William Sound (18% per year); Malaspina Forelands (a decline of between 38-75% between 1992 and 2002); and Glacier Bay (slightly less severe than Prince William Sound).

Current threats to the Kittlitz's murrelet

The factors thought to be most likely leading to the decline of this species are glacial retreat and cyclic shifts in the oceanic environment. Other causes of mortality include chronic oil pollution and disturbance by commercial and recreational boaters, cruise ships, and flight-seeing operations.

Endangered Species Managed by NMFS

Steller Sea Lion

Status and distribution

The Steller sea lion (*Eumetopias jubatus*) is a member of the family Otariidae, order Pinnipedia. While they range along the North Pacific Rim from northern Japan to California, the Gulf of Alaska and the Aleutian Islands are considered the geographic center of their distribution. Due to a significant decline by 64% in total numbers over a 30-year period throughout most of their range, the species in the U.S. was listed as threatened in 1990. In 1997, the Steller sea lion population was split into two separate population segments (western and eastern Alaska distinct population segments) based on demographic and genetic differences discovered since the original listing. The population segment west of 144°W longitude (a line near Cape Suckling, AK) was reclassified as endangered; the listing for the eastern population remained as threatened.

Western Steller Sea Lion

The Western population of Steller sea lions includes all animals at and west of Cape Suckling, Alaska (144°W).

Abundance

The most recent comprehensive estimate of the abundance of the western population of Steller sea lions in Alaska is based on aerial surveys of non-pups in June 2002 and ground-based pup counts in June and July of 2001 and 2002. Combining the pup count data from 2001 to 2002 (8,177) and non-pup count data from 2002 (26,602) results in a minimum abundance estimate in 2001-2002 of 34,779 Steller sea lions in the western U.S. stock.

Current population trends

The first reported trend counts made in 1956-60 indicated there were at least 140,000 sea lions in the Gulf of Alaska and Aleutian Islands. The population in these areas experienced an overall decline of about 70% from 1960 to 1989. The long-term average decline between 1990 and 2002 was 4.3% per year. Between 2002 and 2004, it is estimated that the western Steller sea lion population increased approximately 6-7%. However, there have been regional differences in population trends observed from trend site counts over that time period. The Aleutian Island and western Gulf of Alaska showed an increase, the eastern portion of the range remained stable (near Prince William Sound in the eastern Gulf of Alaska), and there was a decrease in population around Kodiak Island in the central Gulf of Alaska. The results of a population viability analyses published by York et al. in 1996 indicated that the next 20 years would be crucial for this population if rates of decline observed in the 1990s and before were to continue and the western population would be extinct in 100 years.

Conservation needs for Steller sea lions

Steller sea lions are land-based marine predators. Terrestrial habitat includes rookeries where animals return annually to breed and reproduce during the summer, which extends from late May to early July throughout the range. It also includes haul outs that are used for resting and socializing throughout the year. Rookeries can serve also as haul outs during the non-breeding season. These habitats (cliffs, caves, and offshore rocks) are well distributed along the Alaska shoreline. All feeding occurs at sea. Steller sea lions are generalists, feeding predominately on seasonally abundant prey species that tend to aggregate.

In 1993, NMFS designated critical habitat for the threatened eastern population and endangered western populations of Steller sea lions (50 CFR §226.202). It includes a 20 nautical-mile buffer around all major haul outs and rookeries, as well as associated terrestrial, air, and aquatic zones that extend 3,000 feet landward, seaward, and above each major rookery and major haul out. In addition, a three nautical mile no-entry zone has been established for vessel operators approaching all sea lion rookery sites listed in the Aleutian Islands and the Gulf of Alaska. Finally, critical aquatic-foraging habitat has been designated that includes the Shelikof Strait, Bogoslof, and Sequam Pass areas.

Current threats to the Steller sea lion populations

Natural causes of mortality for older animals can include starvation, disease, and predation. Additional causes of pup mortality can include drowning, starvation caused by separation from the mother, and getting crushed or bitten by larger animals. In Alaska, both the western and eastern Steller sea lion populations sustain some direct mortality from by catch in commercial fisheries, subsistence harvest, illegal shootings, and entanglements in fishing gear. Disease, subsistence harvests, intentional killing, and entanglement in debris are currently not viewed as significant factors affecting the status of the population.

Potential factors that may have contributed to the decline and may impede recovery of the western population are competition for prey with commercial fisheries and predation by sharks and killer whales. In addition, NMFS has identified large-scale weather regime shifts as another potential factor contributing to the decline of this population. In the case of both populations, natural changes in prey availability or abundance could also have population-level consequences. Because of the low number of animals, the populations are considered vulnerable to catastrophic and random events that could result in significant declines, threaten viability, and increase the species' risk of extinction.

Blue Whale

Status and distribution

The blue whale (*Balaenoptera musculus*) is a baleen whale species; the largest animal ever known to have lived on earth. While there are resident populations found in both hemispheres, the world's stocks of blue whales were depleted by modern whaling, leaving a small fraction of what it was early in the 20th century. The species has been protected in the North Pacific by the International Whaling Commission since 1966 and was listed as endangered in June of 1970.

Blue whales migrate seasonally, shifting their distribution related to the abundance of their chief prey--krill and oceanographic conditions. The species lives and feeds in both coastal and pelagic environments although they are thought to occur generally more offshore. In the North Pacific, there are believed to be at least two populations (eastern and western) based on acoustic data. The western North Pacific population appear to feed in summer southwest of Kamchatka, south of the Aleutians, and in the Gulf of Alaska. In winter they migrate to lower latitudes in the western and central Pacific. Blue whales from the eastern North Pacific population feed during summer primarily off California and to a lesser extent in the Gulf of Alaska, and in central North Pacific waters. Regional occurrence patterns indicate this population winters off Mexico and Central America. There is thought to be a potential central population that may summer along the Aleutians and winter north of Hawaii. No blue whale feeding aggregations have been found in Alaska.

Abundance

According to the latest marine mammal stock assessment report, no data are available to estimate

population size for the western North Pacific or the putative central blue whale populations. The *Blue Whale Recovery Plan* cites a number of estimates for the eastern North Pacific population based on survey results off the coast of California and Mexico during the 1990s that range from 1,927 to 2,134 animals.

Current population trends

There are no data available to determine a population trend for the western North Pacific blue whale population. According to the recovery plan, the abundance of blue whales along the California coast has been increasing during the 1980s and 1990s but the increase cannot be explained by population growth alone. It is assumed that a shift in distribution has occurred. Blue whales are scarce in areas where they were once abundant, such as the Gulf of Alaska and near the Aleutian Islands.

Current threats to the North Pacific blue whale population

Blue whales are known to be vulnerable to predation by killer whales. Insufficient information is available to determine whether mortality and serious injury from entanglement in fishing gear is insignificant. There is also no competition by the commercial fishery for its main prey. However, habitat degradation could be leading to reduced zooplankton production. Ship collisions have been reported to occur. Finally, increasing levels of anthropogenic noise in the world's oceans from commercial vessels and military sonar may affect blue whales.

Subsistence/Native harvest information

There is no subsistence harvest for blue whales occurring at the present time.

Bowhead Whale

Status and distribution

Bowhead whales, distributed in Arctic and near-Arctic waters, feed almost exclusively on copepods and krill filtered through baleen plates. The western Arctic population of the bowhead whale, *Balaena mysticetus*, is the largest of five stocks and the only population found within U.S. waters. The majority of this population migrates annually from wintering areas in the northern Bering Sea (November to March) through the Chukchi Sea in the spring (March through June) to the Beaufort Sea where they spend the summer (mid-May through September) before returning to the Bering Sea (September through November) to over winter. Most of the year, bowhead whales are closely associated with sea ice. In general, bowhead whales seem to migrate closer to shore in light ice years (30 - 40 km) and farther offshore in heavy ice years (60 - 70 km).

All bowhead whale stocks were severely depleted by commercial whaling occurring principally in the Bering Sea from 1848 to 1919. At that time, numbers of whales had dropped to 1,000 -

3,000 animals from a pre-exploitation abundance level of 10,400 - 23,000. The bowhead whale was listed as endangered in June 1970.

Abundance

The bowhead whale census is based on counts taken from sea ice north of Point Barrow during the whales' spring migration since 1978. According to the most recent marine mammal stock assessment, the preliminary population estimate based on data collected in 2001 is 9,860 bowhead whales.

Current population trends

From 1978 to 1993, the Western Arctic population of bowhead whales increased at a rate of 3.2% or from approximately 5,100 to approximately 8,200 animals. The inclusion of the new preliminary estimate for 2001 stated above results in a rate of increase of 3.3%. The highest count of calves ever recorded during the 2001 census (121) is thought to provide corroborating evidence for a healthy and increasing population.

Current threats to the bowhead whale

Although cases of mortality and serious injury due to entanglement in fisheries gear have been recorded, the estimated annual rate due to this loss is not considered to be significant. There are several factors potentially affecting the bowhead whales' habitat that could be a future source of concern. They are higher levels of pollution (toxic and non-toxic waste and underwater noise) from increased oil and gas development activities anticipated in the Arctic region of Alaska, the secondary impacts from vessel traffic, and the influence of climate change. Although bowhead whales are sensitive to noise, impacts from two decades of oil and gas exploration and drilling on individual survival and reproduction are thought to be minor. The effects of Arctic climate change are already being felt, although there is no way currently to predict the impact on ice-dependent species such as the bowhead whale from changes to sea-surface temperature, ice extent, and prey availability.

Subsistence/Native harvest information

Alaska Native subsistence hunters take approximate 0.1 - 0.5% of the bowhead whale population annually, primarily from nine Alaska communities. The take has been regulated since 1977 by a quota system under the authority of the IWC. Canadian Natives are known also to take whales from this population. When combined, the average subsistence take annually between 1997 and 2001 was 58 bowhead whales. A quota of 280 bowhead strikes was established for 2002-2007.

Fin Whale

Status and distribution

Fin whales (*Balaenoptera physalus*) are widely distributed in the world's oceans, although most

populations were depleted by commercial whaling. Within U.S. waters in the Pacific, fin whales are found seasonally off the coast of North America and Hawaii and in the Bering Sea during the summer. Recent surveys have documented high concentrations in the central-eastern Bering Sea, particularly in zones of high productivity along the shelf break, although they have been observed also in the southeastern Bering Sea. Fin whales feed on krill, large copepods, and schooling fish. The fin whale is listed as endangered under the ESA. According to the draft recovery plan, there has been a moratorium on the commercial hunting of fin whales in most of their range since the late 1980s.

Abundance

There are no reliable estimates of current and historical abundance for the entire range of the Northeast Pacific population. Based on population models, ranges of 42,000 - 45,000 animals have been estimated for the entire North Pacific population prior to exploitation. Between 1958 and 1970, the portion of the population of fin whales in the eastern North Pacific was estimated to have declined from about 20,000 to 9,000 animals. There are provisional estimates from surveys in 1999 and 2000 in the central-eastern Bering Sea and southeastern Bering Sea of 3,368 and 683 animals, respectively.

Current population trend

There is no reliable information on trends in abundance for the Northeast Pacific fin whale population so there is no indication whether recovery of this stock is taking place.

Current threats to the Northeast Pacific fin whale

The main potential direct threat to fin whales is the possibility of illegal whaling since protection from the resumption of commercial whaling is in place. Collisions with vessels, entanglement in fishing gear, reduced prey abundance due to overfishing and habitat degradation, and disturbance from low frequency noise are potential indirect threats. The possible effects of pollution on fin whales remain poorly understood.

Subsistence/Native harvest information

Subsistence hunters in Alaska and Russia have not been reported to take fin whales from this stock.

Central and Western North Pacific Populations of the Humpback Whale

Status and distribution

The humpback whale (*Megaptera novaeangliae*) belonging to the order Cetacea is a baleen whale. Humpback whales are distributed worldwide in all ocean basins. These whales are seasonal migrants. During the summer, they move to northern latitudes to feed in nearshore coastal waters on zooplankton and small schooling fishes. They exhibit a high degree of site

fidelity to feeding areas. The historic feeding range of humpback whales in the North Pacific encompassed coastal and inland waters around the Pacific Rim from Point Conception, California, north to the Gulf of Alaska and the Bering Sea, and west along the Aleutian Islands to the Kamchatka Peninsula and into the Sea of Okhotsk. The Bering Sea is thought to be an important feeding area. During the winter, the whales migrate to temperate and tropical waters to breed and reproduce.

Two of three populations of the humpback whale recognized within the U.S. EEZ of the North Pacific spend time in Alaskan waters during their annual migration cycle. The Central North Pacific population is found in the winter/spring in the Hawaiian Islands and migrates to northern British Columbia/southeast Alaska (including Glacier Bay) and Prince William Sound west to Kodiak in summer/fall. Some animals, however, remain on the feeding grounds year-round. The Western North Pacific population occurs in winter/spring off Japan and is thought to migrate to waters west of the Kodiak Archipelago (the Bering Sea and Aleutian Islands) in summer/fall.

Prior to 1905, there were an estimated 15,000 humpback whales in the entire North Pacific. Following decades of commercial exploitation, the International Whaling Commission banned the commercial hunting of humpback whales in the Pacific Ocean in 1965. By 1966, the population was estimated to be between 1,000 and 1,200 animals. The Humpback whale was listed as endangered under the ESA in 1973. Critical habitat has not been designated for humpback whales anywhere throughout their range.

Abundance

The current annual abundance estimate for humpback whales throughout the North Pacific (Central, Western, and Eastern) is 6,010 animals. This count is based on photo-identification studies conducted between 1991 and 1993 by nine independent research groups. The minimum estimate for the Central North Pacific population is 3,698. Abundance levels have been estimated for whale aggregates in three feeding areas: southeastern Alaska (961), Prince William Sound (less than 200), and Kodiak Island (651). Humpback whales in the southeastern Alaska feeding area may constitute a separate population.

The minimum population estimate for the Western North Pacific population of humpback whales is 367. There are no reliable estimates for the abundance of humpback whales at feeding areas for this stock because knowledge of the specific feeding areas is largely unknown.

Current population trends

The current population trend for the Central North Pacific population of humpback whales is thought to be increasing, although the rate of that increase is not known because of uncertainty in earlier abundance estimates. The estimated number of animals in the southeast Alaska portion of this population has increased in recent years to the substantially higher estimate of 961 in 2000.

The available data indicate a rate of increase between 1979 and 2000 is approximately 0.088.

Reliable information on trends in abundance for the Western North Pacific humpback whale stock is currently not available.

Current threats to the humpback whale

Central North Pacific population

Direct mortalities from by catch in commercial fisheries, injury and mortality from entanglements, and vessel collisions threaten animals in the Central North Pacific humpback whale population. The estimated minimum mortality rate incidental to commercial fisheries is 5.2 humpback whales per year, based on observer data and self-reports between 1990 and 2003. Fishing gear interactions could be a significant source of serious injury (and potential mortality) to humpback whales in southeastern Alaska.

Humpback whales are one of the most frequently hit species worldwide. Humpback whale distribution overlaps significantly with the transit routes of large commercial vessels traveling in the waters off Alaska. These vessels include cruise ships and large tug and barge transport vessels that frequent coastal waters, as well as oil transport tankers generally operating farther offshore (with the exception of Prince William Sound). According to opportunistic reports of vessel collisions with humpback whales in Alaska since 1986, an average of one to two whales have been struck per year. Between 1997 and 2001, six of seven vessel strikes took place in southeast Alaska and one occurred in the northern portion of the range of this population for an additional average of 1.4 humpback whale mortalities per year.

There is a growing whale watching industry in the summering grounds of the humpback whale in southeast Alaska to match a mature industry in its Hawaiian wintering grounds. In 2001, to minimize the potential for harassment and the possibility of collision, NMFS imposed vessel restrictions on approaching humpback whales closer than 100 yards in Alaska. The National Park Service has implemented minimum approach distances for vessels of one quarter mile in Glacier Bay National Park. The growth of the whale watching industry is a concern as humpback whales may abandon preferred habitats if disturbance levels are too high.

Western North Pacific population

Six commercial fisheries operate in Alaska waters within the range of this stock. The estimated annual mortality rate incidental to commercial fisheries from observed fisheries and from stranding data due to entanglement is 0.8 whales per year from 1990-2001. This is considered to represent a minimum estimate. Records of by catch in Japanese and Korean commercial fisheries indicate a minimum mortality level of 1.1 whales per year and 2.4 whales per year in the waters of Japan and Korea if stranding and analyses of meat found in markets are included.

In the case of both populations of the humpback whale found in Alaska, the extent of impact from contaminants in the marine environment is unknown. Another potential source of concern

for both populations is noise pollution from ships and the U.S. Navy's Low Frequency Active sonar program. Although human activities clearly have an adverse effect on individuals in the population, the population-level consequences of these anthropogenic stressors are not fully understood.

Subsistence/Native harvest information

Subsistence hunters in Alaska have not been reported to take from either population of humpback whales.

North Pacific Right Whale

Status and distribution

Before right whales in the North Pacific (*Eubalaena japonica*) were heavily exploited by commercial whalers, concentrations exceeding 11,000 animals were distributed in the Gulf of Alaska, eastern Aleutian Islands, the south central Bering Sea and extending to the Sea of Japan. When this population was listed as endangered in 1970, the total number had been reduced to approximately 100 - 200 animals. Even now, the North Pacific right whale is considered to be the most endangered large whale in the world.

Migratory patterns of this population are unknown, although it is thought the whales spend the summer feeding at high latitudes and migrate to more temperate waters in the winter where calving is thought to occur in coastal waters. Through dedicated aerial and vessel surveys conducted each summer since 1996, right whales have been observed and their calls heard consistently in an area within the southeastern Bering Sea. Preliminary acoustic results indicate that the right whales remain at least through October. During the survey conducted in the summer of 2004, NMFS scientists were able to tag and begin to track several whales in hope of determining where they spend the winter.

Abundance

A reliable estimate of abundance for the North Pacific right whale stock is currently not available. The number of animals surveyed annually from 1998 - 2000 was small (13) and several were recurrent, suggesting a very small population size. However, during 2004, this number was expanded to at least 25 individuals.

Current population trends

A reliable estimate of trends in abundance is currently not available.

Conservation needs for the North Pacific right whale

Recently, the U.S. District Court rendered a decision ordering NMFS to act on an external request in 2000 and subsequent litigation to designate critical habitat for the North Pacific right whale in response to the areas in the Bering Sea where right whale congregations have been sighted (SeaWeb Ocean Update July 2005).

Current threats to the North Pacific right whale

Right whales are large, slow-moving, and tend to congregate in coastal areas. Since ship strikes and entanglement in fishing gear are significant sources of mortality for the North Atlantic right whale population, it is possible that right whales in the North Pacific are comparably vulnerable. There have been no reports of mortalities incidental to commercial fisheries. To date, the reason(s) for the apparent lack of recovery for this population is (are) unknown.

Subsistence/Native harvest information

Subsistence hunters in Alaska and Russia are not reported to take animals from this stock.

Sperm Whale

Status and distribution

The largest of the toothed whales, the sperm whale (*Physeter macrocephalus*) is one of the most widely distributed of any marine mammal species and these data suggest a somewhat discrete population center in Alaska. Seasonal movement of sperm whales in the North Pacific is unclear. It is thought that females and juveniles remain in tropical and temperate waters year-round, while males move north in the summer to feed in the Gulf of Alaska, Bering Sea, and waters around the Aleutian Islands. Sperm whales inhabit deep water and prey on giant squid and are known to dive for sharks, skates, and fishes. Over the past two centuries, upward of 1,000,000 sperm whales were taken by commercial whalers. The sperm whale was listed as endangered throughout its range in 1970 under the Endangered Species Conservation Act of 1969.

Abundance

Current and historic estimates for the abundance of sperm whales in the North Pacific are considered unreliable and the number of sperm whales occurring within Alaska waters is unknown. The latest stock assessment provides a preliminary estimate of 102,112 sperm whales in the western North Pacific.

Current population trends

Reliable information on trends in abundance for this stock is not available.

Current threats to the North Pacific population of the sperm whale

Other than man, the greatest natural predators to sperm whales are killer whales. Sperm whales have the potential to be harmed by ship strikes. Sperm whale interactions with longline fisheries operating in the Gulf of Alaska are known to occur and may be increasing in frequency according to the most recent NMFS stock assessment report for this population. Disturbance by anthropogenic noise may prove to be an important habitat concern in some areas of this population's range, notably in areas of oil and gas activity where the frequency of shipping is high. Finally, sperm whales have the potential to accumulate persistent organic pollutants. Preliminary results from a global survey of toxic contaminants in marine mammals sponsored by the Ocean Alliance show sperm whales across the Pacific with concentrations of DDT, followed by polychlorinated biphenyls (*Science*, 2005, Vol.309:1166).

Subsistence/Native harvest information

Sperm whales have never been reported to be taken by subsistence hunters.

Sei Whale

Status and distribution

Sei whales (*Balaenoptera borealis*) were originally distributed in the world's temperate oceans before most populations were reduced, some of them drastically, by commercial whaling from the 1950s through the early 1970s. The sei whale is one of the least well studied of the commercially exploited whale species. Like its counterpart population in the North Atlantic, the sei whale is a more deepwater species that tends not to enter semi-enclosed marginal seas or gulfs. Their prey is believed to range from copepods and krill to pelagic squid and schooling fish. More is known about the Eastern North Pacific population found off of the West Coast from California to British Columbia. Reports from the 1970s and 1980s indicate that sei whales occur mainly south of the Aleutian Islands and are thought to rarely concentrate deep in the Bering Sea. Sei whales are listed as endangered under the ESA.

Abundance

There have been no direct estimates of sei whale abundance in the entire (or eastern) North Pacific based on sighting surveys.

Current population trends

There are no data on trends in sei whale abundance in North Pacific waters. Model-based estimates have been made of pre-whaling abundance based on whaling catch and effort data that suggest that the total population of adult sei whales in the North Pacific declined from about 42,000 to 8,600 between 1963 and 1974. However, the latest stock assessment for the Eastern North Pacific population reports an estimated total commercial take of North Pacific sei whales between 1947 and 1987 of 61,500 animals.

Current threats to the sei whale

As is the case for the fin whale, the main potential direct threat to sei whales is the possibility of illegal whaling or the resumption of commercial whaling. Sei whales appear to be less prone to entanglement in fishing gear and strikes by vessels since they live in deep water. Due to the nature of their trophic interactions, sei whales are more likely to be affected by competition for prey with the commercial fisheries for finfish. Again, disturbance from increasing levels of anthropogenic noise in the world's oceans are a potential indirect threat, as is the possible effects of pollution on sei whales, which remain poorly understood.

Subsistence/Native harvest information

Sei whales have never been reported to be taken by subsistence hunters.

Threatened Species

Eastern Steller Sea Lion

The eastern population of Steller sea lions includes all animals east of Cape Suckling, Alaska (144°W)

Abundance

The most recent comprehensive estimate of Steller sea lions in southeast Alaska, based on aerial surveys conducted in 1996 yielded a total of 14,621 animals. By 2000, based on subsequent surveys of trend sites, the estimated population count was 16,674 (pups and non-pups). The eastern population of Steller sea lions is a transboundary population that includes additional sea lions from British Columbia to Californian. The latest minimum estimate for the eastern sea lion population for all areas is 31,028 animals.

Current population trends

Between 1982 and 2002, counts of adult and juvenile Steller sea lions at trend sites in southeast Alaska increased from 6,898 to 9,951. The population has maintained a 1.7% annual increase since 1989. Although the central California rookery continues to decline, the rest of the eastern population continues to increase, and NMFS considers the prospects for the recovery of this population to be encouraging. (See page 12-13 for a description of conservation needs and current threats to the eastern population of the Steller sea lion)

Biological Effects Analysis

Potential effects associated with the elimination of the mining and mineral processing standard

There are 77 million hectares of land open to mineral development in Alaska, an area about twice the size of Nevada and more than the other 49 states combined. Some of the major minerals mined in Alaska include zinc, gold, silver, lead, copper, and coal. While more than 75 percent of the federal land in Alaska is closed to mining because it is located in federally-protected areas, there remain about 49.6 million acres of federal land open to mineral entry. There are 95.9 million acres of state land open to mineral entry or an area roughly equivalent to the state of California.

As an industry, mining has the capacity to result in significant direct and indirect adverse impacts on the environment and living resources, including listed species and their habitat. Large-scale mines and the secondary forms of development that must be in place to sustain these operations can modify or eliminate fish and wildlife habitat (including wetlands and tundra), alter terrain and disrupt natural drainage patterns, and degrade air and water quality. While some level of reclamation may be possible once a mine is exhausted, the environment can never be returned to its former state and varying conditions of habitat degradation or loss can be permanent.

Changes of potential concern in the ACMP

Under 11 AAC 112.260, mining and mineral processing has been removed as a use subject to the ACMP, and replaced with a narrower standard that addresses sand and gravel extraction in barrier islands and saltwater areas. The mining and mineral processing standard, pertaining mainly to hard rock and placer mining, was deleted to comply with the legislative mandate of HB 191 to “eliminate duplication or restatement of other state or federal requirements.” The State has indicated that existing state and federal law and regulations are sufficient to address any environmental impacts from mining and mining activities that were originally covered by the state and district standards.

The effect of the original mining standard was to ensure that mining activities either taking place in the State’s coastal zone, or having effects on the State’s coastal resources would have to be “regulated, designed and conducted” so that it met all of the other standards in the State’s coastal program, including the state’s habitat and subsistence standards, and any district program policies that included mining policies. Under the CZMA and its federal consistency provisions, this included mining activities that occurred on federal lands, if they affected the State’s or a district’s coastal resources. With the removal of mining as a specific use of concern to the ACMP, while other state and federal laws may apply to mining-related activities, federal agencies are no longer required to ensure that their direct mining activities or permits are in compliance with state and district coastal standards.

Three federal permits are required for conducting mining activities in Alaska: the U.S. Environmental Protection Agency’s National Pollution Discharge Elimination System permit for discharge of water into stream, river, wetland, or any other natural body of water; the U.S. Army Corps of Engineers’ Clean Water Act Section 404 and general permits for activities in wetlands and River and Harbors Act Section 10 permits for any structure or work that could obstruct traditionally navigable waters; and an ESA section 7 consultation and authorization from the

appropriate land management agency, such as the U.S. Forest Service or Bureau of Land Management if a project is on federal lands. None of these federal permit programs include policies that are specific to local district resources or issues.

In terms of mining on state lands, the removal of mining from the ACMP standards will have a similar effect. While general state laws will continue to apply to mining-related activities, previously, mining activities themselves were required to be consistent with the State's coastal standards and district program policies. The district programs had specific policies, many of which included being involved in the siting and planning process. These assurances have been removed.

The State offers several approaches to district programs in order for them to compensate for the loss of mining as a use subject to the ACMP. First it suggests that districts may address mining-related activities through other standards such as utility routes and facilities, transportation routes and facilities, energy facilities, or subsistence, and district enforceable policies approved under 11 AAC 114. Yet the State has changed several of these standards, making it unclear whether the redundancy that led to the removal of the original mining policy still exists. Secondly, the State has established new requirements for the development of district plans under 11 AAC 114 that will make it difficult for a district to include enforceable policies in its plan that addresses mining-related activities. Ultimately, the districts that currently have mining standards in place will lose their ability to apply them and will experience difficulty adopting other compensatory standards.

Potential effects on listed resources of change to the mining and mineral processing standard

There are a number of large-scale mining projects in operation or under development in Alaska. Most are located on or near the coast, with mining activity found predominantly in the southeast region of the state and along the Bering Sea coast. The State is poised to accommodate additional mining proposals. Indeed, a number of changes to the ACMP were intended to streamline the review of mining project permits and authorizations coordinated by the State's large mine project team. The State DNR website alludes to the complex nature of these projects and their potential for environmental damage both during and after the life of a mine. The State also acknowledges that "mining has, and has had, adverse impacts on other coastal values" (Program Description for the ACMP, June 2, 2005). As important as impacts from the on-site portion of the mining operation is secondary development in the form of the array of infrastructure that must also be constructed such as roads and docking facilities to support the transport over water and land and through the air of workers, supplies, and mined products.

All of the listed animal species in Alaska (with the exception of the sei whale) spend some portion of their life cycle in or near coastal waters. Whale species such as the blue whale, humpback whale, the right whale and the bowhead are known to be particularly vulnerable to the effects of noise pollution and ship strikes that could be associated with the future operation of large-scale mining activities. In the case of the North Pacific right whale, which calves in the winter in Bristol Bay, the reasons for their apparent lack of recovery are not known. The endangered Western population of the Steller sea lion would also be susceptible to general

disturbances associated with industrial activity near their rookeries, haul out, and foraging areas and conservation measures have been established in an effort to reduce or eliminate such sources of harassment.

Substantial increases in mining activities in the northern and western regions of the State could place several of the listed bird species at increased risk of decline. For example, the spectacled and Steller's eiders spend portions of their life cycle, including nesting, molting and overwintering in shallow, nearshore waters along the western portion of the North Slope of Alaska. Increased human presence that mining would introduce would lead to increased predation on their breeding grounds. Increases in vessel traffic in the Bering Sea and the Gulf of Alaska could lead to adverse conditions for the endangered short-tailed albatross which is believed to be vulnerable to collisions with vessel rigging.

It is obviously beyond the scope of this analysis to document actual effects to listed species from future mining activities. However, one can deduce that the status quo of environmental management in the State has not led to signs of recovery of a number of listed species. The effects of mining and the ancillary activities that are required to support it can not be ruled out as a possible factor. Should the State's encouragement lead to a substantial increase in mining operations, the environmental balance could be shifted. It is not clear from the many changes that have been made to the ACMP that one can assume that the existing level of management safeguards necessary to protect listed species are in fact in place.

In short, mining will continue to be a regulated activity in the State's coastal area under state and federal law. Because all major activities to be conducted in coastal areas are envisioned to have some federal involvement in terms of permitting authorities mentioned above, individual projects will be required to undergo consultation, pursuant to section 7 of the ESA. And while the State's mining and mineral processing standard has been eliminated, the mining standard under the original ACMP simply referred to other ACMP standards, although the State was not specific regarding which of these standards would apply. (See section 7.4.5 in the DEIS for more detail). Therefore, the changes to the ACMP, while not favorable to the conservation of fish and wildlife resources, are not, in and of themselves likely to adversely affect listed species or designated critical habitat.

Potential effect of changes to the habitat policy

According to the original ACMP FEIS, the ACMP protects endangered species by protecting their habitats, a provision made possible through the habitat standard. A general standard included for all habitats was that "habitats must be managed so as to maintain or enhance the biological, physical and chemical characteristics of the habitat which contribute to its capacity to support living resources." Then specific standards were provided for a series of important habitats, so designated "due to biological productivity or where an area has special features which make it important to a particular species." It was further stated in that FEIS, that the ACMP recognizes that when the state's oil and gas resources are exhausted, coastal habitats will continue to be the state's economic basis in the long term.

Changes of potential concern in the ACMP

The State made several significant changes to the habitat standards that should be carefully considered in terms of potential consequences to listed species. The largest change is that the State entirely removed its introductory language to the section requiring that each type of habitat be managed to “maintain or enhance the biological, physical, and chemical characteristics of the habitat which contribute to its capacity to support living resources.” The standard was felt to be “vague and unrealistic...and contained no level of predictability as to how the test was to be applied.” The State rewrote the habitat standard so that, with the exception of rocky islands and sea cliffs and barrier islands and lagoons, each type will now be managed for very limited habitat values. (See Section 5.3.2.12 in the EIS for a description of the changes that were made to the remaining eight habitat areas).

As part of the overall amendments to the ACMP, the State is placing a new emphasis on the other existing state resource agencies’ authorities and their coverage of habitat management, including the components of habitats that contribute to biological productivity. Those state resource agency authorities are applicable throughout Alaska. Besides the state’s Water Quality Standards, handled and enforced separately through the Department of Environmental Conservation, the most relevant statutes pertaining to the protection of fish and wildlife habitat include the Fishway Act and the Anadromous Fish Act.

In addition, to account for any resource that may be inadequately addressed through other state laws, regulations, and the ACMP, as well as federal laws, the State has built into the ACMP several mechanisms for designating “important habitats.” Districts can identify habitats that are of local importance and significance (i.e., as a matter of local concern) and develop additional enforceable policies to further manage those habitats. Alternately, the State can designate important habitats on a case-by-case basis during a project’s consistency review. Important habitats are part of the habitat standard and bolster the general habitat standard by managing those “important habitats” to “avoid, minimize, or mitigate significant adverse impacts of the special productivity of the habitat.” With the exceptions noted above, the only time a particular habitat receives more holistic review is if it is designated an “important habitat.” Finally, upland habitat was dropped as a habitat directly subject to management, although a rather cumbersome process is provided for the designation of uplands as important habitat.

Potential effects on listed resources of changes to the habitat policy

It is difficult to determine what the ramifications will be to listed resources from these changes. However, there are some indications that the implementation of the various changes to the habitat policy will not be necessarily straightforward or ultimately as protective for the environment. For example, the districts’ ability to designate important habitat will not be particularly easy and local governments, which may provide more insight or a closer review of permitted activities that will impact coastal resources, may lose their opportunity to provide meaningful input. In general, the changes make the State and districts more reliant on existing state laws for the protection of coastal habitat. The two state laws, the Fishway and Anadromous Fish Acts, have been characterized as narrow and inadequate by some commenters.

Nonetheless, these laws, in conjunction with federal environmental statutes, will become the primary regulatory programs on which federal and state biologists must depend to support the recovery of listed resources and stem the further decline of some species. It remains to be seen whether this backstop will be sufficiently adequate to retain previous levels of protection.

The State has, however, left open the possibility for both the State and districts to designate “important habitats” for each of these types of habitat, if they can be demonstrated to be of local importance. Additional state and federal laws will also continue to apply to habitat protection. The changes to the habitat policy are therefore not likely to adversely affect listed species or designated critical habitat.

Potential effect of changes to the mitigation policy

Changes of potential concern to the ACMP

Changes have been made to the state’s sequencing process to avoid, minimize, or mitigate adverse impacts to affected coastal resources from development projects. The mitigation policy is an element of the habitat, utilities, and transportation standards. As described in the previous section on habitat, the original standard was the “maintain or enhance” requirement. The process of “to avoid, minimize, or mitigate” involves avoidance of impacts where practicable, minimization of impacts where avoidance is not practicable, and compensating for impacts to the extent appropriate and practicable.

In the course of modifying this requirement, the state further clarified that the current mitigation standard does not involve monetary compensation (or fee in lieu) of impacted resources, nor does the standard require a no net loss of coastal resources. Further, the terms “restore” and “replace” impacted coastal resources were replaced with the term “rehabilitate.” It was determined that rehabilitation, or the return of at least some ecosystem function and some original species, would be a more realistic goal for large-scale projects.

Potential effects on listed resources of changes to the mitigation policy

Again, it is not clear that changes to this policy will have a direct and discrete impact on listed species or designated critical habitat. Large projects with the potential to adversely affect species or designated habitat will likely trigger the requirement for federal agencies to consult with either the U.S. FWS or NMFS on meeting required conservation measures. According to the state’s mitigation policy, deference will be given to federal mitigation requirements.

It does appear that in the course of modifying the policy to make it more realistic, the standard for the restoration and replacement of habitat has been weakened. Replacing the terms “restore” and “replace” impacted coastal resources with the less stringent “rehabilitate” could lead to the gradual decline in environmental quality in the state’s coastal zone. Also, the program changes that relate to the ability of district programs to apply the state mitigation standard have been greatly restricted. This will reduce the opportunity for local influence in shaping development proposals that could have an impact on local environmental resources. Implementation of these

changes will lead to environmental conditions that could fall short of the status quo. The bird species such as the two eiders and the Kittlitz's murrelet would be particularly directly affected by a reduction in any standard affecting coastal habitat integrity and extent because of their dependence on stretches of coastal tundra and nearshore waters during vulnerable periods of breeding and molting. Nonetheless, because federal mitigation requirements will likely continue to apply, the changes to the mitigation policy are not likely to adversely affect listed species or designated critical habitat.

Potential effect of changes to the subsistence policy

Both the state and federal government recognize the fundamental importance of subsistence to Native and non-Native Alaskans alike. The history of subsistence rights in Alaska is traced in section 6.2.8 of the DEIS. The original subsistence policy in the ACMP enabled the districts to identify and protect subsistence resources so that, in turn, subsistence activities will be protected. Subsistence is closely linked to several of the State's endangered species, i.e., the bowhead whale, the Steller sea lion, the spectacled eider, and the northern sea otter, whose harvests are regulated under the Marine Mammal Protection Act and the ESA.

Changes of potential concern to the ACMP

The State has made significant revisions to the subsistence standard. The requirement for state agencies and districts to recognize and assure opportunities for subsistence usage of coastal areas and resources has been removed. Under 11 AAC 114.250, the State or a district may only designate subsistence areas in which the subsistence standards and enforceable policies will then apply, when it has demonstrated that subsistence is a matter of local concern and does not restrict or exclude uses of state concern. Previously districts identified areas where subsistence was a "dominant use of coastal resources," and had a "priority over all nonsubsistence uses and activities." In addition, previously, before a potentially conflicting use or activity was authorized in a designated subsistence area, a study of possible adverse impacts and appropriate safeguards to assure subsistence usage was required. Under the new standard, a project applicant must submit an analysis or evaluation of reasonably foreseeable adverse impacts of the project on subsistence use, and that project "must avoid or minimize impacts to subsistence." Finally, the districts no longer have the ability to negotiate with an applicant to mitigate any impacts to subsistence resources.

Potential effects on listed resources of changes to the change in the subsistence policy

Over the long term, the revised subsistence standard could have negative effects on subsistence resources. For one, the focus is no longer on the resource itself. This change in emphasis is of concern to those dependent on subsistence resources since the historical focus remained on the long term status of subsistence species. The need to designate subsistence areas where the subsistence policy will apply will result in a loss of flexibility that would be necessary in cases where annual or seasonal shifts in climatic conditions may lead to changes in migratory patterns. There is also concern regarding the change removing the mitigation option from the sequencing process of the subsistence standard. This means that a proposed project must avoid or minimize

impacts to subsistence uses of coastal resources, a goal that may not always be achievable. It is possible that projects will be allowed to proceed even though they may have adverse impacts that will no longer be subject to mitigation, which would have been appropriate and previously could have been considered.

Only a handful of listed species are harvested for subsistence currently. They are the bowhead whale, the spectacled eider, and the southwest Alaska northern sea otter. However, a strong subsistence policy that benefits these species will remove harvesting pressure on other listed species that may have been or could be harvested in the future.

It is not clear that the revised subsistence standard will have negative effects on subsistence resources. The State has removed the overarching requirement that districts and state agencies recognize and assure opportunities for subsistence usage of coastal areas and resources. However, the State has retained the ability for: (1) the State to designate subsistence areas; (2) districts to designate subsistence areas and develop subsistence policies; and (3) for State and district policies to apply to federal actions located outside designated areas if the federal action will have an effect on subsistence uses, regardless of the location of the federal action or where the effect to subsistence uses occur.

The State's revised standards still ensure that districts and state agencies have the opportunity to recognize and assure subsistence usage of coastal areas and resources through the requirements for designation of subsistence areas. In addition, the subsistence harvest of listed species will continue to be regulated under federal law. The changes to the subsistence policy are therefore not likely to adversely affect listed species or designated critical habitat.

Potential effect of changes to District plan guidance

A hallmark of the ACMP has been the balance in decision-making between the state and district programs and the strong representation by districts on the now defunct Coastal Policy Council. The changes to the entire district program development and implementation process are far reaching and substantial. Decision-making has been centralized at the state level and the end effect has been to greatly reduce the ability of coastal districts to manage coastal resources and uses. In addition, many of the state-level changes to policies can no longer be easily rectified at the district level. This is because the new process will constrain the districts from setting policies and impose a cumbersome process for designating important habitats and identifying matters of local concern.

Potential effects on listed resources of changes to the District plan guidance

There are several possible repercussions to stem from this arrangement. The first is that the decision-making process will not be as robust since there could be less local knowledge of resources and environmental conditions being factored into land use decisions. With fewer district policies, the scope of local decision-making will be curtailed and there is the potential that state laws will not adequately compensate for those omissions. The incentive for local participation in the ACMP may gradually wane, leaving district governments and citizens less

engaged in monitoring project or activities with the potential to impact habitat and natural resources. Should one or more of these circumstances occur, it is possible to conclude that under the amended ACMP, the level of habitat protection may not be as strong as it was before. All listed species would be indirectly affected, but the bird species that use coastal habitats for nesting areas would be the most vulnerable to terrestrial habitat impacts that could increase if habitat protection levels were to be diminished. These possible repercussions, however, are not necessarily inevitable consequences of centralization at the state level, and there will still be opportunities for local participation in the ACMP at the district level. The changes to district plan guidance therefore are not likely to adversely affect listed species or designated critical habitat.

Summary of Potential Effects

In Alaska, there are currently ten endangered species, three threatened species (including the eastern population of the Steller sea lion), and one candidate species being managed for recovery by the U.S. FWS or NMFS. Five species (short-tailed albatross and blue, fin, humpback, and sperm whales) have a home range that is broader than Alaska. The remaining species or DPS are known to remain in Alaskan waters or further offshore in territorial waters of the EEZ throughout their life cycle. Listed species can be found variously in all coastal regions of the State, in or along the Arctic Ocean, the Chukchi and Bering Seas, the Gulf of Alaska, on and along the Aleutian Island chain and parts of the North Pacific, and in numerous coastal embayments. Steller sea lions, the humpback and North Pacific Right whales, both eiders, the Kittlitz's

murrelet and the northern sea otter DPS spend time in coastal or nearshore waters to forage or breed. On the other hand, the sei whale is thought to prefer deep water.

There are many challenges associated with understanding the life history requirements and status of these protected species. Many of these species range in areas that are remote and where the weather conditions are harsh for much of the year. Migratory patterns are hard to determine with certainty, as are abundance levels, particularly for animals that travel great distances and spend significant amounts of time underwater. Most of these animals display elusive behavior when exposed to human activity. Finally, there are not enough funding or trained personnel to gather the reliable data necessary to gain an accurate determination of individual population levels at meaningful spatial scales. The two service agencies are accustomed to dealing with these uncertainties as they make projections of possible effects on protected species and under the ESA, they must provide the benefit of the doubt to the species.

Despite these hurdles, data show that abundance levels for three species are increasing and thought to be in a state of recovery – the short-tailed albatross, the bowhead whale, and the eastern population of the Steller sea lion. Two species appear to be stable – the Aleutian shield fern and the humpback whale. Available data point to a status of sharply declining populations for the Steller's eider, northern sea otter, and the Kittlitz's murrelet. Data provide a mixed picture for the western population of the Steller sea lion. Finally, there is either no data or unreliable data to determine whether six species – the spectacled eider and blue, fin, North

Pacific right, sperm, and sei whales – are either making a recovery or experiencing further decline.

The historical causes for the decline of about half of the listed species in Alaska are well known. Commercial exploitation led to the depletion of the whale species and the short-tailed albatross. Controls have been placed on the whaling industry through international agreements that have allowed some whale species to begin to recover. Japan is cooperating to provide legal protection on its main nesting island for the short-tailed albatross. Yet as described above, current monitoring has not been able to confirm consistent recovery in most cases.

Species declines cannot be attributed solely to natural processes, although environmental variability is a source of change being observed. Rather, a range of environmental threats have been identified that may contribute in full or in part to the continued decline in some of Alaska's listed species. The most ubiquitous is pollution by persistent industrial and agricultural chemicals, oil, marine debris, and noise. Marine contaminants have led to a general decline in environmental quality worldwide; even the far reaches of Alaska can no longer be considered pristine.

Some activities are known to lead to direct threats to species, such as collisions with commercial or recreational vessels or entanglement or ingestion of fishing gear or marine debris. Direct exposure to human activities, be it through oil and gas exploration, mining, or tourism, has the potential to disrupt social patterns, feeding, and reproduction. Overfishing has the potential to affect trophic structure, changing levels and types of available prey and/or increasing chances for predation. Natural, periodic, large-scale shifts in climate can do the same and will exacerbate existing trophic changes and impacts. In the case of bird species, settlement often attracts a new suite of predators.

The status of listed resources in Alaska is a product of the current management regime and environmental setting. While it is impossible to project with any level of accuracy what the future will hold for these species, it is possible to conclude that human influences in the region will continue to increase. It is assumed that management safeguards for the protection of listed resources and habitat in place in the State prior to this comprehensive set of changes to the ACMP will be at least equivalent to what is implemented under the amended program. Since so many of the program changes that matter to natural resources are interrelated, there could be unintended consequences to resources that will only come to light with a track record of implementation.

Some of the program changes highlighted in this analysis (e.g., removal of mining standard and changes to the habitat, mitigation, and subsistence policies) were selected because they were originally intended as a safeguard against environmental impacts from development, resource extraction activities, and overuse. Finally, it is inevitable that there will be a reduction in the level of local input regarding the effects on the integrity of living resources and their habitats from proposed projects. To the extent that this local knowledge is lost because program changes have directly blocked it, made it more cumbersome to provide, or reduced the incentive to participate, the end effect will be that resource protection will be compromised to some degree.

Despite these conservative assumptions, it is our determination that the approval of the ACMP program amendment is not likely to adversely affect listed species or designated critical habitat. Future proposed federal agency actions will entail consultation with the Service agencies, and the State is encouraged to coordinate voluntarily with NMFS and the U.S. FWS in other cases to meet the conservation needs of protected resources.